

# **WAFER POLISHING CONTROL SYSTEM FOR CHEMICAL MECHANICAL PLANARIZATION MACHINES**

## **Abstract**

5           Methods and apparatus for applying a uniform polishing pressure on a wafer are disclosed. According to one aspect of the present invention, a chemical mechanical planarization polishing apparatus includes a polishing pad, a wafer holder, and a force control system. The wafer holder supports a wafer to be polished using the polishing  
10   pad. The polishing pad is arranged to move relative to the wafer holder such that an area of contact between the wafer holder and the polishing pad varies. The force control system including a controller and a plurality of actuators that apply forces to the polishing pad. The controller controls the forces as the area of contact varies to substantially maintain a first polishing pressure on the wafer arranged to be supported by the wafer  
15   holder.